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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,219

05/03/2006

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EXAMINER

MCCLLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

MAIL DATE

DELIVERY MODE

08/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,219

Applicant(s)

SAITO ET AL.

Examiner

Renata McCloud

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/3, 6/6/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4,6,7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ensor (US 5398298).

Claim 1: A DC motor drive unit for driving a DC motor, adapted to control switching means connected in series to said DC motor, said drive unit comprising: acceleration setting means (fig. 1: 11/19) for setting a predetermined acceleration period and acceleration stage data in association with said acceleration period at the time of startup of said DC motor (col. 3:22-30); and PWM pulse generation means (fig. 1: 18) for generating PWM pulses having duty ratios in accord with said acceleration stage data or in accord with a prescribed rotational speed of the motor (col. 2:66-3:9; col. 5:9-20), wherein said switching means (fig. 1:17) is controlled by the PWM pulses having duty ratios in accord with said acceleration stage data (from 16, 15) during said predetermined acceleration period (col. 2:40-55); and the PWM pulses having the duty ratio in accord with said prescribed rotational speed after said predetermined acceleration period (fig 3: time after t_r ; col. 5:29-36).

Claim 2: an acceleration period includes a sequence of N ($N \rightarrow 1$) acceleration stages (fig. 2, more than one stage) each set to have PWM pulses of a predetermined duty ratio over a predetermined acceleration time, said duty ratio increasing in the successive acceleration stages (fig 2).

Art Unit: 2837

Claim 3: The DC motor drive unit according to claim 1, further comprising a data judgment means (fig. 1:7) for judging whether an externally supplied speed instruction data (fig. 1: from 11) instructs driving of said motor or not, wherein, when a judgment is made that said speed instruction data instructs driving of said motor, said switching means (18) is controlled by: the PWM pulses (fig. 2) having duty ratios in accord with said acceleration stage data during said predetermined acceleration period (figs. 2-3); and the PWM pulses having a duty ratio in accord with the rotational speed instructed by said speed instruction data after said acceleration period (figs. 2-3).

Claim 4: an acceleration period includes a sequence of N ($N \rightarrow 1$) acceleration stages (fig. 2, more than one stage) each set to have PWM pulses of a predetermined duty ratio over a predetermined acceleration time, said duty ratio increasing in the successive acceleration stages (fig 2).

Claim 6: Ensor teaches the controller is adapted to execute acceleration of said DC motor in said acceleration period only if a judgment is made that said speed instruction data instructs driving of the motor and the motor is not in rotation (fig. 2, start-up; col. 1:42-45)

Claim 7: Ensor teaches the drive unit is adapted to stop the motor if the speed instruction does not instruct driving of the motor (col. 3:65-68, 4:22-35, end command)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2837

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ensor in view of Heydt (US 6710567).

Claim 5: Ensor teaches the limitations of claim 4, referring to claim 5, they teach measuring the time that has elapsed from the beginning of said sequence of acceleration period to determine the current stage in said acceleration period (fig. 2-3 tR). They do not teach determining the duty ratio associated with said stage and/or the duty ratio associated with said speed instruction data in accordance with a lookup table. Heydt et al teach determining the duty ratio associated with said stage and/or the duty ratio associated with said speed instruction data in accordance with a lookup table. (Col 7:65)-8:8). It would have been obvious to one having skill in the art at the time the invention was made to modify the apparatus taught by Ensor to use a look-up table as taught by Heydt in order to control the speed of the motor.

Claim 6: Ensor and Heydt teach the limitations of claim 5. Referring to claim 6, Ensor teaches the controller is adapted to execute acceleration of said DC motor in said acceleration period only if a judgment is made that said speed instruction data instructs driving of the motor and the motor is not in rotation (fig. 2, start-up; col. 1:42-45).

Claim 7: Ensor and Heydt teach the limitations of claim 5. Referring to claim 7, Ensor teaches the drive unit is adapted to stop the motor if the speed instruction does not instruct driving of the motor (col. 3:65-68, 4:22-35, end command).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See PTO892.

Art Unit: 2837

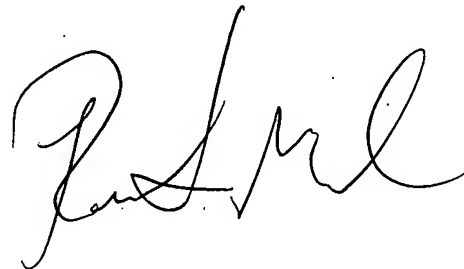
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Renata McCloud
Examiner
Art Unit 2837

rdm

A handwritten signature in black ink, appearing to read 'Renata McCloud', is written over the printed name and title.